



08/30/00

PROVISIONAL APPLICATION COVER SHEET

CERTIFICATE OF EXPRESS MAILING

I hereby certify that this paper and the documents and/or fees referred to as attached therein are being deposited with the United States Postal Service on August 30, 2000 in an envelope as "Express Mail Post Office to Addressee" service under 37 CFR §1.10, Mailing Label Number EL560312830US, addressed to the Assistant Commissioner for Patents, Washington, DC 20231.

Dionna Holmes
Dionna Holmes

Attorney Docket No.: KABAP002P

First Named Inventor: Henkin



Assistant Commissioner for Patents
Box Provisional Patent Application
Washington, DC 20231

☐ Duplicate for fee processing

Sir: This is a request for filing a PROVISIONAL APPLICATION under 37 CFR 1.53(c).

INVENTOR(S)/APPLICANT(S)

LAST NAME	FIRST NAME	MIDDLE INITIAL	RESIDENCE (CITY AND EITHER STATE OR FOREIGN COUNTRY)
Henkin	Assaf		San Francisco, CA USA
Shaham	Yoav		San Francisco, CA USA
Vitos	Henit		San Francisco, CA USA
Friedman	Benny		San Francisco, CA USA

TITLE OF INVENTION (280 characters max)

METHOD AND SYSTEM FOR ON-LINE BUSINESSES, INCLUDING BUT NOT LIMITED TO INTERNET SERVICE PROVIDERS TO ANALYZE PAGE CONTEXT ALL OVER THE WEB ON REAL TIME, AND IN REAL TIME MARK-UP TEXTUAL OBJECTS ON THE PAGE AND DELIVER DYNAMIC OFFERS IN REAL TIME

CORRESPONDENCE ADDRESS

Customer Number 022434
BEYER WEAVER & THOMAS, LLP
P.O. Box 130
Mountain View, CA 94042-0130
Telephone (510) 843-6200
Fax (510) 843-6203



22434

PATENT TRADEMARK OFFICE

ENCLOSED APPLICATION PARTS (check all that apply)

<input checked="" type="checkbox"/> Specification	Number of Pages <u>07</u>	<input type="checkbox"/> Small Entity Statement
<input checked="" type="checkbox"/> Drawing(s)	Number of Sheets <u>11</u>	<input type="checkbox"/> Other (specify) _____

☒ A check or money order is enclosed to cover the Provisional filing fees. Provisional Filing Fee Amount (\$) 150

☒ The commissioner is hereby authorized to charge any additional fees which may be required or credit any overpayment to Deposit Account No. 50-0388 (Order No. KABAP002P).

The inventions made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No ☐ Yes, the name of the U.S. Government agency and the contract number are: _____

Respectfully Submitted,

SIGNATURE

*Michael L. Louie*DATE August 30, 2000

TYPED NAME

Michael L. LouieREGISTRATION NO. 36,988

PROVISIONAL APPLICATION FILING ONLY

METHOD AND SYSTEM FOR ON-LINE BUSINESSES,
INCLUDING BUT NOT LIMITED TO INTERNET
SERVICE PROVIDERS TO ANALYZE PAGE CONTEXT
ALL OVER THE WEB ON REAL TIME, AND IN REAL
TIME MARK-UP TEXTUAL OBJECTS ON THE PAGE
AND DELIVER DYNAMIC OFFERS IN REAL TIME

Assaf Henkin

Yoav Shaham

Henit Vitos

Benny Friedman

BEYER WEAVER & THOMAS, LLP
P.O. Box 130
Mountain View, CA 94042-0130
Telephone (510) 843-6200

II. Background of the Invention

A. Summary of the Invention

The present invention relates to a computer method and system for enabling businesses with an online presence to offer relevant information (content, marketing opportunities, promotions, graphics, commerce opportunities, etc.) (Hereafter "the Information") to their users, based on the context of the Web page the users are on, regardless of their online location (hereafter "the Application"). The invention provides businesses with an efficient and unique method of reaching users at anytime, when browsing the web, because it allows the business to reach users that are on any web page with Information that is relevant to the context of the page that the user is on. The Application allows the business to present links 20 (Figure 1, 5, 7), Information (Figure 2, 3), and special offers 25 (Figure 2, 4) that are highly relevant to the user at that point in time, based on the context of the Web page he/she is currently viewing without the user needing to perform any active action. The Application also enables users to use their mouse or keyboard and to select (highlight) text elements (Figure 8) and submit them via the Application button on the tool bar (Figure 8) or any other button or link 35 provided by the business. Once clicking on such a button or link the selected text will be directly submitted to a pre-determined search engine on any website. If a marked object on the given web page is already a link, once the user clicks on the underline that the Application has marked, a dynamic HTML pop-up layer 40 (Figure 3) will open enabling the user to go to the destination inserted by the Application or the original link that existed on the page (Figure 6). The services which the Application can deliver include, but are not limited to, direct links (Figure 1, 6, 7) to other pages with relevant information, links that open layers with relevant information (Figure 2, 4) on the page that the user is on, layers that open automatically once the user reaches a given page and present information that is relevant to the context of the page (Figure 3), graphic and/or text promotional offers, etc. and direct submission of selected text to external search engines (Figure 8).

B. Need For the Invention

A problem that many businesses face today is that they cannot proactively reach, serve, interact, sell or make relevant offers to users while the users are outside of the businesses' Web domain (website, toolbar, email, etc.). The most severe consequence of this problem occurs when a user has an interest in products, services or Information that the business offers but the business is unaware and thus is unable to reach and serve this user. As a result, businesses miss revenue generating and/or cost savings opportunities.

Moreover, the key for a cost effective operation is determined by the efficiency of the flow of goods, services, along the value chain from suppliers, vendors, partners or manufacturers (herein referred to as "Suppliers") through the business, and to the business's customers or users. Today, a web domain is the primary online vehicle to serve a personalized, targeted flow of services and Information from the businesses to the users and customers. Businesses cannot take advantage of the World Wide Web as a platform on which they can reach and serve users with relevant Information, outside of their own Web domain.

VI. Detailed Description of the Invention

The eZula solution is the first contextual-based platform for proactive, personalized interaction without limitations to a specific domain. eZula's context-based infrastructure service is an Internet-class platform, built on a Web component architecture enabling Businesses to extend their online reach to existing Customers in more online locations than just their own Web domain and to maximize their "Proactive Presence" (PP). The Proactive Presence is defined as the volume of online contact points where a business can proactively reach, serve, sell and make offers to its Customers in a customized, personalized and targeted way across the Web. Therefore, maximizing the Proactive Presence results in greater Web-based revenues, market share and/ or a lower cost of business and also improves the flow of Services along the value chain.

eZula's platform empowers businesses to proactively respond to the contextual content on any given page that their Customers are on by marking up (including, but not limited to, underline, placing an icon/logo, highlight) pre-defined keywords or phrases on any website, turning static HTML into links that take their Customers to specific URL's, or proactively deliver dynamic, targeted and customized service via a tailor made private labeled embedded layer on the relevant page.

Businesses can take advantage of the web-based interface that is personal and secure (herein referred to as "Extranet"). The Extranet is hosted on one of the application servers in the eZula server farm. It has its own domain name (extranet.ezula.com) and it is designed primarily for the businesses' line of business managers to have easy, secure access and control to the data 24/7. The three main functions that the Extranet supports are:

1. Data upload (Figure 14)
2. Data management (Figure 15)
3. Activity reports

Once the business manager updates data using the Extranet, the new data will be updated on the users' machines within a fixed timeframe.

As mentioned above, The Application consists of server application, client application (Figure 9) and Extranet (Figure 14). The client application holds a search engine that was

designed and implemented by eZula. This search engine can perform multiple types of identification and matches based on a given set of data and the textual content on a given web page. The search engine operates on the user's machines utilizing some of the user's machine CPU and memory and therefore is highly scalable.

Search Engine (Figure 10)

The search engine resides on the user's machine as part of the client application. It uses data that is processed, encrypted and then sent to the client application from the server application. The business customer can update the data at any time using the Extranet. The search engine was designed to support different business requirements. There are two possible search modes:

1. Keyword search – the keyword (one word or more) will be identified and matched exactly as it appears in the data file.
2. Fuzzy search – a proximity search that finds phrases on the page that approximately match the given string. For example, if a supplied string was "SONY DVD Player DV120", the fuzzy search may find the following strings as possible matches depending on the parameters:
 - a. SONY DVD
 - b. SONY
 - c. DVD Player
 - d. DV 120

The search engine can search the document text, URL, title, Meta tags and more. Any property of the page can be used for this search.

This search engine is different from standard web search engine:

- Web search engines, look for a phrase (relatively small string) in a collection of indexed web pages.
- eZula's search engine looks for multiple phrases in the current page (usually a large string) being displayed by the browser.
- To do that the search engine uses 2 data structures (standard hash tables):
 - One keeps the supplied strings (and their attributes)
 - Second one has only one-word keywords (extracted from the other list) that points to the IDs of the strings in the other list.

The search is conducted (Figure 10) by going over the words in the text of the current HTML, looking for those words in the keywords hash table. If one is found, we take the strings IDs of the supplied strings and try to match them (according to their attributes) in the document.

General Process (Figure 12)

An Internet user will receive the client application in the following three major methods (Figure12 #1):

1. Part of the client application of business that is downloaded to user's machine.
2. CD that is sent to user (usually with business' software on it)
3. Independent download process (not as part of another software's download process.)

eZula has developed smart download technology that downloads a thin stub very quickly to the user's machine, and then once the stub is on the user's machine, the rest of the necessary files are pulled from the eZula server farm in order to complete the installation of the software.

This process can be done in two ways:

- Download page – an HTML page that has an ActiveX control that triggers the download process to the client machine.
- A small executable that invokes the download.

In both cases, the stub is being downloaded to the client machine, and then the rest of the files are downloaded in small chunks of 20K.

Once the files are all downloaded, the installation is done, automatically and silently.

Some of the application files that are on the user's machine include the indexed data for the search engine. This data is divided into display names and keywords as follows in this example:

Display name: SONY DVD Player DV120

Keywords: SONY, DVD, Player, DV120

The search engine uses the display name and keywords in order to analyze the context of the page that the user is on and to match between the current text on the page and the data provided by the business customer (Figure 9, 10). (See Search Engine detailed explanation above).

The application will start running automatically once the user opens a browser (Figure 12 #2).

While a user surfs the Web, eZula performs advanced contextual analysis to make matches between eZula's business customer-provided keywords and the content on the page (Figure 12 #3). Once a match is made, matched items (e.g. product names, keywords and phrases based on the feed that was provided by eZula's business customer) are visually marked (underline, highlight, and customer logo) according to the customer's specification (Figure 12 #4). In our example a match could be finding and underlining the string "SONY DVD" on the web page. Once the user clicks on this, he is either redirected to the exact page where information regarding SONY DVD Player DV120 (Figure 12 #5) or a pop-up layer opens next to the underline and displays the different possible matches for this string (Figure 2). One of these possible matches will be the SONY DVD Player DV120. If the user clicks on this item in the layer he or she will be redirected to that exact page.

In addition, eZula proactively inserts a dynamic HTML layer 40 onto the page (Figure 3). This layer is customized to match the business customer's brand (or its customers' brand) and it may contain either a summary of products, keywords and phrases or advertising banners and marketing messages based on the context of the page. The user can then click on the marked objects on the page and/or on linked objects within the layer, which instantaneously activates and opens another dynamic layer with more information and

options. Alternatively, the user can be taken directly to a specific page on the customer's site or on any other pre-designated URL.

The eZula client application has an agent that "scans" the page that the user is on. The agent that scans the page passes elements from the page to the search engine that also resides in the client application. The search engine compares the page elements to a given set of data and passes relevant matches back to the agent. The agent receives this information from the search engine and performs markup of different textual objects on the page. The agent can also open a corner layer with more relevant information.

The client application consists of a main application that is always running and agents that open with each browser that the user opens. The agent waits for a download complete event from the browser (that means that the entire page completed download). Once the download complete event is fired, the agent extracts the text from the page without the HTML tags, the links, and the HTML table cells. The agent passes this to the search engine in the main application that is part of the client application. The search engine then uses a hash table mechanism in order to complete the search process (Figure 13). Once the search process is complete, the search engine passes results back to the main application, which in turn passes parameters back to the agent. The agent then marks up the textual objects on the page that were identified.

Extranet (Figures 14, 15, 16)

The extranet is a web-based application implemented with Microsoft's development tools and applications. The application utilizes Active Server Pages, COM components written in Visual Basic and Visual C++, SQL Server 7.0, HTML, Dynamic HTML, JavaScript, Design Time Controls, and different graphics. The application is hosted at the Server Farm on an Intel machine running IIS 4.0.

The Extranet application hosts secure and personal accounts for the different business customers. The business customer representative logs in and manages the data and actions for the business' community. Data can be modified (added, changed or deleted), and actions that relate to this data can be modified as well. As soon as modifications took place on the Extranet they are saved on the database and file server and within a specific time window the changes will be posted on the application servers in the eZula server farm. The next time that users of this business open their browsers the client application will check if there is new data and will update itself with the modifications.

Personalization

eZula stores a global unique identifier (GUID) number on the user's machine. The GUID is stored in the computers registry as part of unique application data. This GUID can be linked via a cross-reference table or directly in the eZula database to other systems primarily to enhance the service to the user and make it personalized. eZula will offer customers to link the data that they gather through other application with the service that eZula provides so that for example specific users will see information that is not only relevant to the page's context but also to their personal interest and past activities.

Servers and Application Architecture (Figure 13)

The eZula application (ContextPro) was designed with scalability and robustness in mind. eZula's application is a three-tier application with a COM ATL application on the client, ASP pages and server COM components in the middle tier on the server, and a SQL Server 7.0 database as the main data source (Figure 15). ContextPro was designed to allow for high numbers of users with relatively low numbers of application servers. This allows for extreme scalability since by adding several more application servers to the Server Farm, eZula can support additional millions of users. The application enjoys such great numbers since most of the work is done on the users machines; the search, markup, dynamic layers, etc. Only when the users clicks on linked objects, the request goes to the eZula application servers that in turn redirects the user to the appropriate destination. This action is under 200 bytes of data and therefore each application server can support an average of 22 such redirects per second. eZula tracks and stores all user information on its own servers, and therefore has the ability to personalize the service and use this information as input for optimizing other systems as well.

Server Farm

The server farm is a description of a group of servers that reside in a single location. Our web farm is co-located at a third party provider that provides all networking services. The servers that will reside in this location will be so called members of the eZula server farm. The servers will include but will not be limited to the following:

1. Application servers – processing all requests from the client application, and serving necessary information.
2. Miscellaneous servers – performing monitoring, backup, and maintenance tasks.
3. Database servers – hosting the different databases
4. Storage servers – backup, storage

Parameters

The parameters are passed from the client to the server when the user clicks on a linkable object. A linkable object can be an underlined textual object, linkable text or graphics from the corner layer (Figure 3) or a pop-layer (Figure 2). The parameters that are passed are:

- User id – unique user identification
- Display name id – the unique identification number for the textual object that was identified

The parameters are passed using URL name value pairs that are appended to the URL string and are passed via HTTP protocol.

[illegible]

These data sources will hold product information, user information, and other data that is generated by the community, provided from content providers, or stored based on user activity.

Provisional Patent Application

- I. Title: Method and System for Online Businesses, including but not limited to Internet Service Providers, to analyze page context all over the web on real time, and in real time markup textual objects on the page and deliver dynamic offers in real time.
- II. Inventors: Assaf Henkin, Yoav Shaham, Henit Vitos, and Benny Friedman
- III. Assignee: eZula, Inc., San Francisco, California.
- IV. Drawings and Printouts:

A. Screen Printouts:

Figure 1

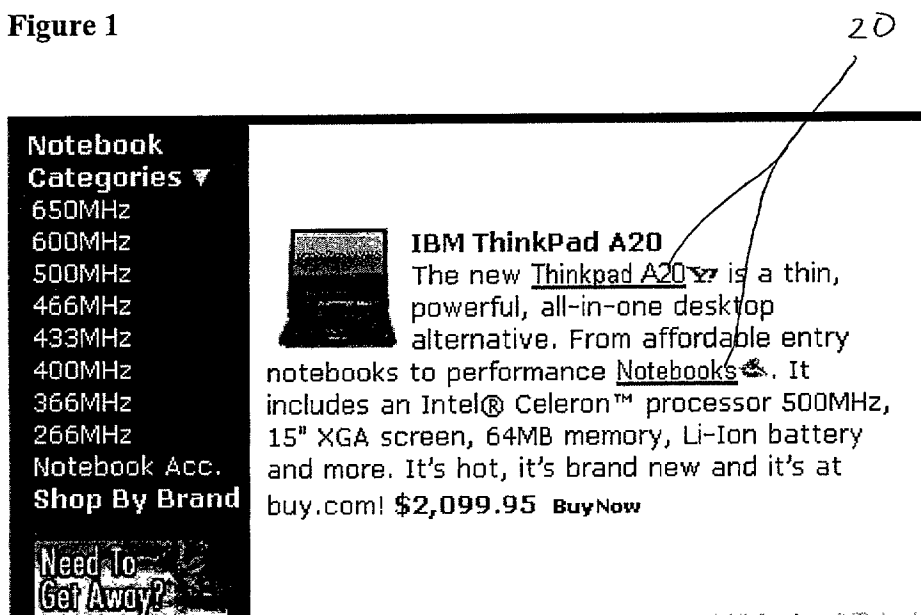


Figure 2

CDNOW Save up to 30% on ALL Jazz, Classical & New Age Titles

MUSIC VIDEO GIFTS MY CDNOW HELP

Music Beat Sales & Specials Top 100 Radio

Shopping Cart contains 0 items

Artist [Search Classical](#)

Patti Labelle

Shop
[Music](#)
[Videos](#)

Articles & Media
[Reviews](#)
[News](#)

Who & What
[Biography](#)
[Related Artists](#)

If you like this

Earn 200 Points and \$5 off your first purchase at
 Earn 2 Points per dollar spent at
 Earn 2 Points per dollar spent at

Live At The Apollo 1999

Best Of Patti Labelle 1999

25

Figure 3

Buy the right notebook. Our Notebook Advisor can help.

Online Price: \$999.97
 Mfg. Part # PS180U-19886

Online Price: \$1,599.97
 Mfg. Part # 155727-003

Satellite 1805CDS with an AMD K6-2 450MHz processor, 32MB RAM, 4.3GB Hard Drive, 12.1-inch Color Bright Dual Scan Display, 24X CD-ROM Drive, 56K V.90 Modem and Windows 98 [More Info...](#)

This Compaq notebook features a 475 MHz AMD-K6-2 processor with 3DNow! technology, 64 MB of RAM, 6 Gig hard drive, 24X CD ROM drive, 56K modem, 12.1" TFT SVGA Display, and 64-bit 3D graphics with 4MB of video memory [More Info...](#)

Online BUY NOW **Stores CHECK**

Online BUY NOW **Stores CHECK**

webmiles

Buy Notebooks and get:
 earn 1 mile per \$2 spent at [Dell.com](#)
 earn 1 mile per \$1 spent at [enews.com](#)
 earn 1 mile per \$1 spent at [DealDeal.com](#)

Earn miles now!

Refer a friend and earn 150 WebMiles: my friend's email:

Presario 1200-XL118 AMD K6-2 500MHZ Processor 64MB RAM 6.0GB Hard Drive, 13.0-inch

40

Figure 4

buy.com

Search options: Computers | Enter Keyword: | Go

Computers | Support | eAccount | Order Tracking | eSearch | Gift Center | Basket

Notebook Categories ▼
 650MHz
 600MHz
 500MHz
 466MHz
 433MHz
 400MHz
 366MHz
 266MHz
 Notebook Acc.
 Shop By Brand

FREE SHIPPING STORE
 HOT PRODUCTS!
 \$100 off at buy.com
 EXTRADE
 3M NEW!

buynotebooks.com

get \$100 off on your next buy.com purchase when you open an account with EXTRADE!

IBM ThinkPad A20
 The new ThinkPad® A20 is a thin, powerful, all-in-one desktop alternative. From affordable entry notebooks to performance notebooks It includes an Intel® Celeron™ processor 500MHz, 15" XGA screen, 64MB memory, Li-Ion battery and more. It's hot, it's brand new and it's at buy.com!
 \$2,099.95 BuyNow

Toshiba Portege 3440CT
 The award-winning Portege Series packs a long list of features into its remarkably slender profile - and incredibly, weighs a 25 lbs. It includes a Intel® Pentium® III processor 500MHz, 64MB memory, 6.0GB HD, 11.3" TFT screen and more!
 \$2,321.95 BuyNow

Acer TravelMate 602TER
 The TravelMate 602 provides

KDS Computers Valiant 5340AS
 Power, performance and portability

Figure 5

IBM ThinkPad A20
 The new ThinkPad® A20 is a thin, powerful, all-in-one desktop alternative. From affordable entry notebooks to performance notebooks It includes an Intel® Celeron™ processor 500MHz, 15" XGA screen, 64MB memory, Li-Ion battery and more. It's hot, it's brand new and it's at buy.com!
 \$2,099.95 BuyNow

Toshiba Portege 3440CT
 The award-winning Portege Series packs a long list of features into its remarkably slender profile - and incredibly, weighs 3.4 lbs. It includes a Intel® Pentium® III processor 500MHz, 64MB memory, 6.0GB HD, 11.3" TFT screen and more!
 \$2,321.95 BuyNow

Featured Product
 • Only \$999.00!
 buy.com offers a mini notebook at a mini price. Get the KDS TinyNote 2825CT for only \$999.00

Shop by Brand
 • IBM Office Computing
 • Hewlett Packard

Best Sellers
 My Extra | Fieldwork | nVoice | Auctions | Best deals | Surf | WebMD Health | Email | ePlans | Coupons | Free Photos

Desktops from \$789
 supplies are limited.

Dell factory outlet
 www.dell.com/outlet


FreeLane


Parameter	Value	Unit
Temperature	25	°C
Pressure	101.3	kPa
Humidity	50	%
Light intensity	100	μmol photons m ⁻² s ⁻¹
CO ₂ concentration	400	ppm
Water potential	-0.1	MPa
Soil moisture	0.6	g g ⁻¹
Root length	10	cm
Stem diameter	2	cm
Leaf area	15	cm ²
Chlorophyll content	20	mg g ⁻¹
Protein content	10	mg g ⁻¹
Carbohydrate content	5	mg g ⁻¹
Enzyme activity	1	U g ⁻¹
Growth rate	0.5	cm day ⁻¹
Survival rate	0.8	%
Reproduction rate	0.2	%
Seed mass	0.1	g
Seed viability	0.9	%
Seed germination	0.7	%
Seedling height	5	cm
Seedling root length	2	cm
Seedling leaf area	1	cm ²
Seedling chlorophyll content	10	mg g ⁻¹
Seedling protein content	5	mg g ⁻¹
Seedling carbohydrate content	2	mg g ⁻¹
Seedling enzyme activity	0.5	U g ⁻¹
Seedling growth rate	0.2	cm day ⁻¹
Seedling survival rate	0.6	%
Seedling reproduction rate	0.1	%
Seedling seed mass	0.05	g
Seedling seed viability	0.8	%
Seedling seed germination	0.6	%
Seedling seedling height	3	cm
Seedling seedling root length	1	cm
Seedling seedling leaf area	0.5	cm ²
Seedling seedling chlorophyll content	5	mg g ⁻¹
Seedling seedling protein content	2	mg g ⁻¹
Seedling seedling carbohydrate content	1	mg g ⁻¹
Seedling seedling enzyme activity	0.2	U g ⁻¹
Seedling seedling growth rate	0.1	cm day ⁻¹
Seedling seedling survival rate	0.4	%
Seedling seedling reproduction rate	0.05	%
Seedling seedling seed mass	0.02	g
Seedling seedling seed viability	0.7	%
Seedling seedling seed germination	0.5	%
Seedling seedling seedling height	2	cm
Seedling seedling seedling root length	0.5	cm
Seedling seedling seedling leaf area	0.2	cm ²
Seedling seedling seedling chlorophyll content	2	mg g ⁻¹
Seedling seedling seedling protein content	1	mg g ⁻¹
Seedling seedling seedling carbohydrate content	0.5	mg g ⁻¹
Seedling seedling seedling enzyme activity	0.1	U g ⁻¹
Seedling seedling seedling growth rate	0.05	cm day ⁻¹
Seedling seedling seedling survival rate	0.3	%
Seedling seedling seedling reproduction rate	0.02	%
Seedling seedling seedling seed mass	0.01	g
Seedling seedling seedling seed viability	0.6	%
Seedling seedling seedling seed germination	0.4	%
Seedling seedling seedling seedling height	1	cm
Seedling seedling seedling seedling root length	0.2	cm
Seedling seedling seedling seedling leaf area	0.1	cm ²
Seedling seedling seedling seedling chlorophyll content	1	mg g ⁻¹
Seedling seedling seedling seedling protein content	0.5	mg g ⁻¹
Seedling seedling seedling seedling carbohydrate content	0.2	mg g ⁻¹
Seedling seedling seedling seedling enzyme activity	0.05	U g ⁻¹
Seedling seedling seedling seedling growth rate	0.02	cm day ⁻¹
Seedling seedling seedling seedling survival rate	0.2	%
Seedling seedling seedling seedling reproduction rate	0.01	%
Seedling seedling seedling seedling seed mass	0.005	g
Seedling seedling seedling seedling seed viability	0.5	%
Seedling seedling seedling seedling seed germination	0.3	%
Seedling seedling seedling seedling seedling height	0.5	cm
Seedling seedling seedling seedling seedling root length	0.1	cm
Seedling seedling seedling seedling seedling leaf area	0.05	cm ²
Seedling seedling seedling seedling seedling chlorophyll content	0.5	mg g ⁻¹
Seedling seedling seedling seedling seedling protein content	0.2	mg g ⁻¹
Seedling seedling seedling seedling seedling carbohydrate content	0.1	mg g ⁻¹
Seedling seedling seedling seedling seedling enzyme activity	0.02	U g ⁻¹
Seedling seedling seedling seedling seedling growth rate	0.01	cm day ⁻¹
Seedling seedling seedling seedling seedling survival rate	0.1	%
Seedling seedling seedling seedling seedling reproduction rate	0.005	%
Seedling seedling seedling seedling seedling seed mass	0.001	g
Seedling seedling seedling seedling seedling seed viability	0.4	%
Seedling seedling seedling seedling seedling seed germination	0.2	%
Seedling seedling seedling seedling seedling seedling height	0.2	cm
Seedling seedling seedling seedling seedling seedling root length	0.05	cm
Seedling seedling seedling seedling seedling seedling leaf area	0.02	cm ²
Seedling seedling seedling seedling seedling seedling chlorophyll content	0.2	mg g ⁻¹
Seedling seedling seedling seedling seedling seedling protein content	0.1	mg g ⁻¹
Seedling seedling seedling seedling seedling seedling carbohydrate content	0.05	mg g ⁻¹
Seedling seedling seedling seedling seedling seedling enzyme activity	0.01	U g ⁻¹
Seedling seedling seedling seedling seedling seedling growth rate	0.005	cm day ⁻¹
Seedling seedling seedling seedling seedling seedling survival rate	0.05	%
Seedling seedling seedling seedling seedling seedling reproduction rate	0.001	%
Seedling seedling seedling seedling seedling seedling seed mass	0.0001	g
Seedling seedling seedling seedling seedling seedling seed viability	0.3	%
Seedling seedling seedling seedling seedling seedling seed germination	0.1	%
Seedling seedling seedling seedling seedling seedling seedling height	0.1	cm
Seedling seedling seedling seedling seedling seedling seedling root length	0.02	cm
Seedling seedling seedling seedling seedling seedling seedling leaf area	0.01	cm ²
Seedling seedling seedling seedling seedling seedling seedling chlorophyll content		

Figure 7

JVC FSMD9000 Micro
Audio System 20

CD player, digital AM/FM stereo, 1 MiniDisc recorder and player, HyperBass SuperPro, Bass-Reflex speakers & full-function remote controller.

A black and white photograph showing the components of the JVC FSMD9000 Micro Audio System. From left to right, there is a slim vertical component (likely the remote or a small speaker), a rectangular box (possibly the amplifier or tuner), another rectangular box (likely the MiniDisc recorder/player), and a larger, more complex unit with a circular display and various buttons (likely the CD player).

The JVC logo, consisting of the letters 'JVC' in a stylized, bold font.

jandr.com

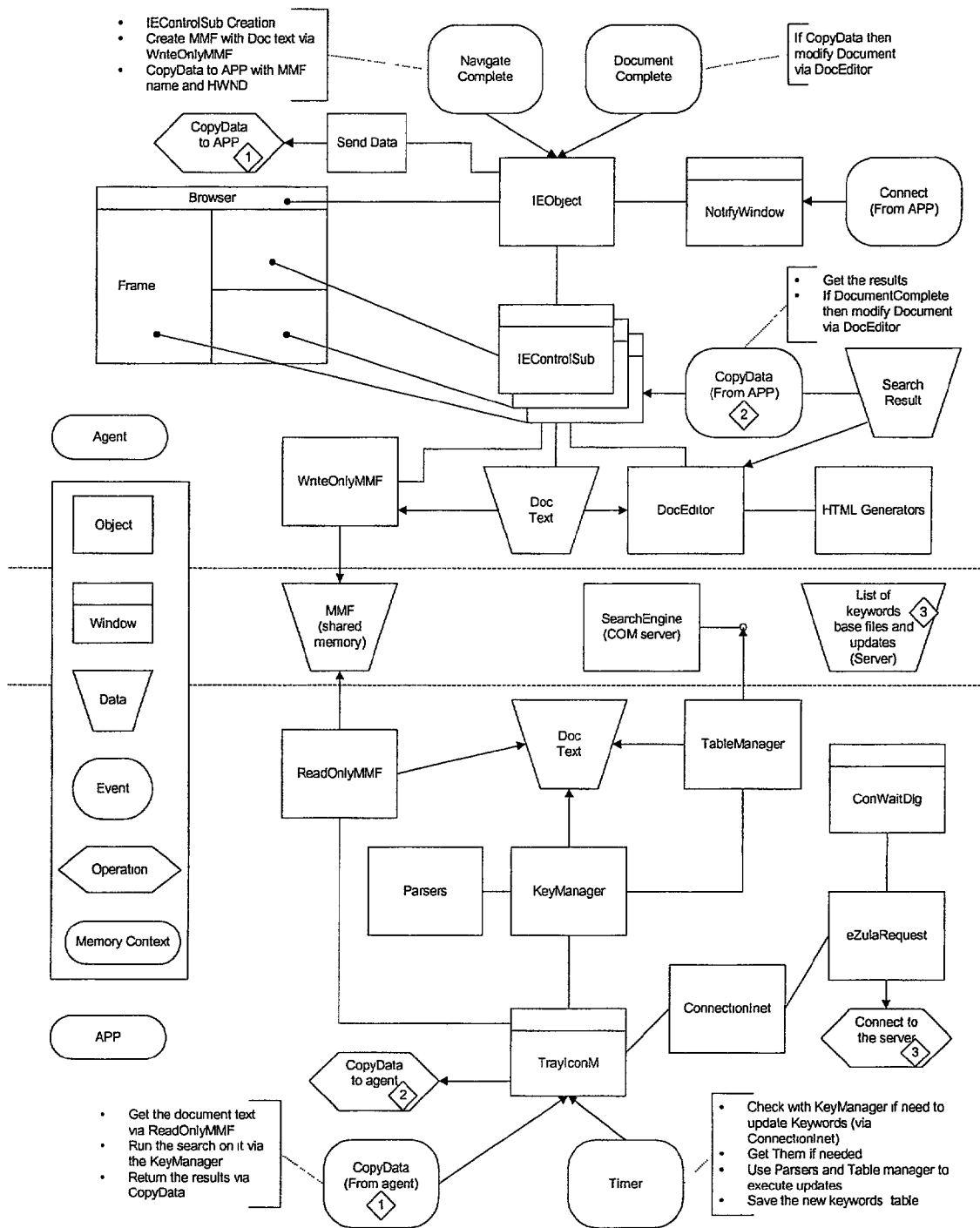
[illegible][illegible]

Figure 10

- One Hash table consist of keywords extracted from display names or represent them.
- One Hash table consist of display strings keyed by IDs
- The keywords are pointing to the display names IDs that includes them or represent them.
- Noise words and words that point to more then 20 display names were filtered

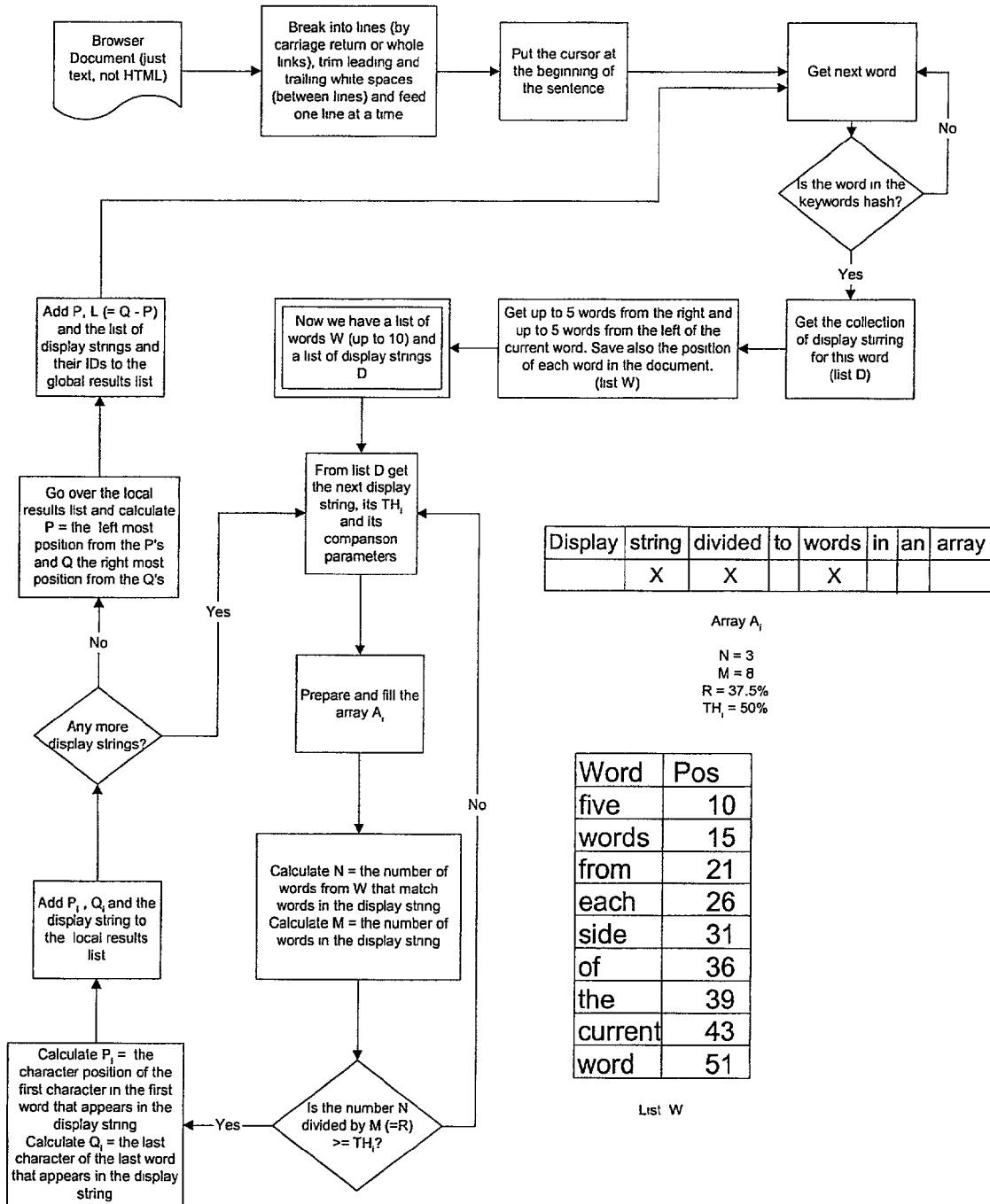
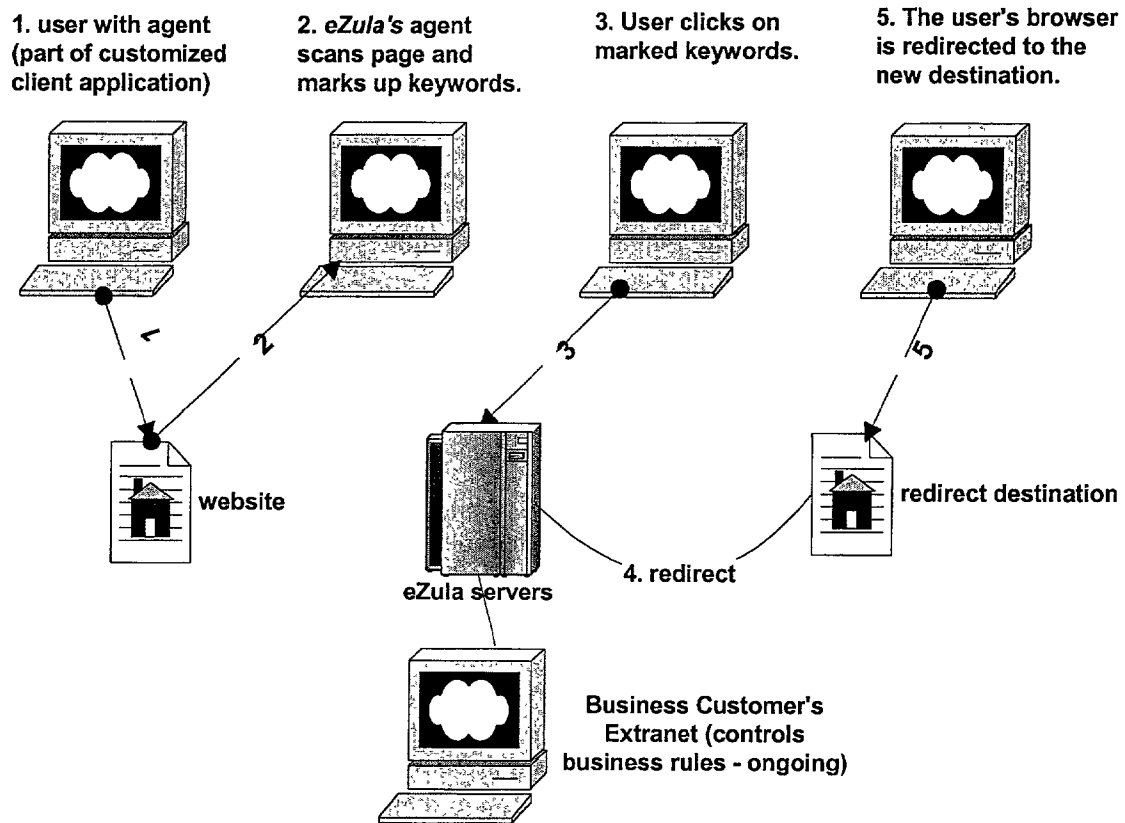


Figure 11



Parameter	1997-1998		1998-1999		1999-2000		2000-2001		2001-2002		2002-2003		2003-2004		2004-2005		2005-2006		2006-2007		2007-2008		2008-2009		2009-2010		2010-2011		2011-2012		2012-2013		2013-2014		2014-2015		2015-2016		2016-2017		2017-2018		2018-2019		2019-2020		2020-2021		2021-2022		2022-2023		2023-2024		2024-2025		2025-2026		2026-2027		2027-2028		2028-2029		2029-2030		2030-2031		2031-2032		2032-2033		2033-2034		2034-2035		2035-2036		2036-2037		2037-2038		2038-2039		2039-2040		2040-2041		2041-2042		2042-2043		2043-2044		2044-2045		2045-2046		2046-2047		2047-2048		2048-2049		2049-2050		2050-2051		2051-2052		2052-2053		2053-2054		2054-2055		2055-2056		2056-2057		2057-2058		2058-2059		2059-2060		2060-2061		2061-2062		2062-2063		2063-2064		2064-2065		2065-2066		2066-2067		2067-2068		2068-2069		2069-2070		2070-2071		2071-2072		2072-2073		2073-2074		2074-2075		2075-2076		2076-2077		2077-2078		2078-2079		2079-2080		2080-2081		2081-2082		2082-2083		2083-2084		2084-2085		2085-2086		2086-2087		2087-2088		2088-2089		2089-2090		2090-2091		2091-2092		2092-2093		2093-2094		2094-2095		2095-2096		2096-2097		2097-2098		2098-2099		2099-2100		2100-2101		2101-2102		2102-2103		2103-2104		2104-2105		2105-2106		2106-2107		2107-2108		2108-2109		2109-2110		2110-2111		2111-2112		2112-2113		2113-2114		2114-2115		2115-2116		2116-2117		2117-2118		2118-2119		2119-2120		2120-2121		2121-2122		2122-2123		2123-2124		2124-2125		2125-2126		2126-2127		2127-2128		2128-2129		2129-2130		2130-2131		2131-2132		2132-2133		2133-2134		2134-2135		2135-2136		2136-2137		2137-2138		2138-2139		2139-2140		2140-2141		2141-2142		2142-2143		2143-2144		2144-2145		2145-2146		2146-2147		2147-2148		2148-2149		2149-2150		2150-2151		2151-2152		2152-2153		2153-2154		2154-2155		2155-2156		2156-2157		2157-2158		2158-2159		2159-2160		2160-2161		2161-2162		2162-2163		2163-2164		2164-2165		2165-2166		2166-2167		2167-2168		2168-2169		2169-2170		2170-2171		2171-2172		2172-2173		2173-2174		2174-2175		2175-2176		2176-2177		2177-2178		2178-2179		2179-2180		2180-2181		2181-2182		2182-2183		2183-2184		2184-2185		2185-2186		2186-2187		2187-2188		2188-2189		2189-2190		2190-2191		2191-2192		2192-2193		2193-2194		2194-2195		2195-2196		2196-2197		2197-2198		2198-2199		2199-2200		2200-2201		2201-2202		2202-2203		2203-2204		2204-2205		2205-2206		2206-2207		2207-2208		2208-2209		2209-2210		2210-2211		2211-2212		2212-2213		2213-2214		2214-2215		2215-2216		2216-2217		2217-2218		2218-2219		2219-2220		2220-2221		2221-2222		2222-2223		2	
-----------	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	-----------	--	---	--

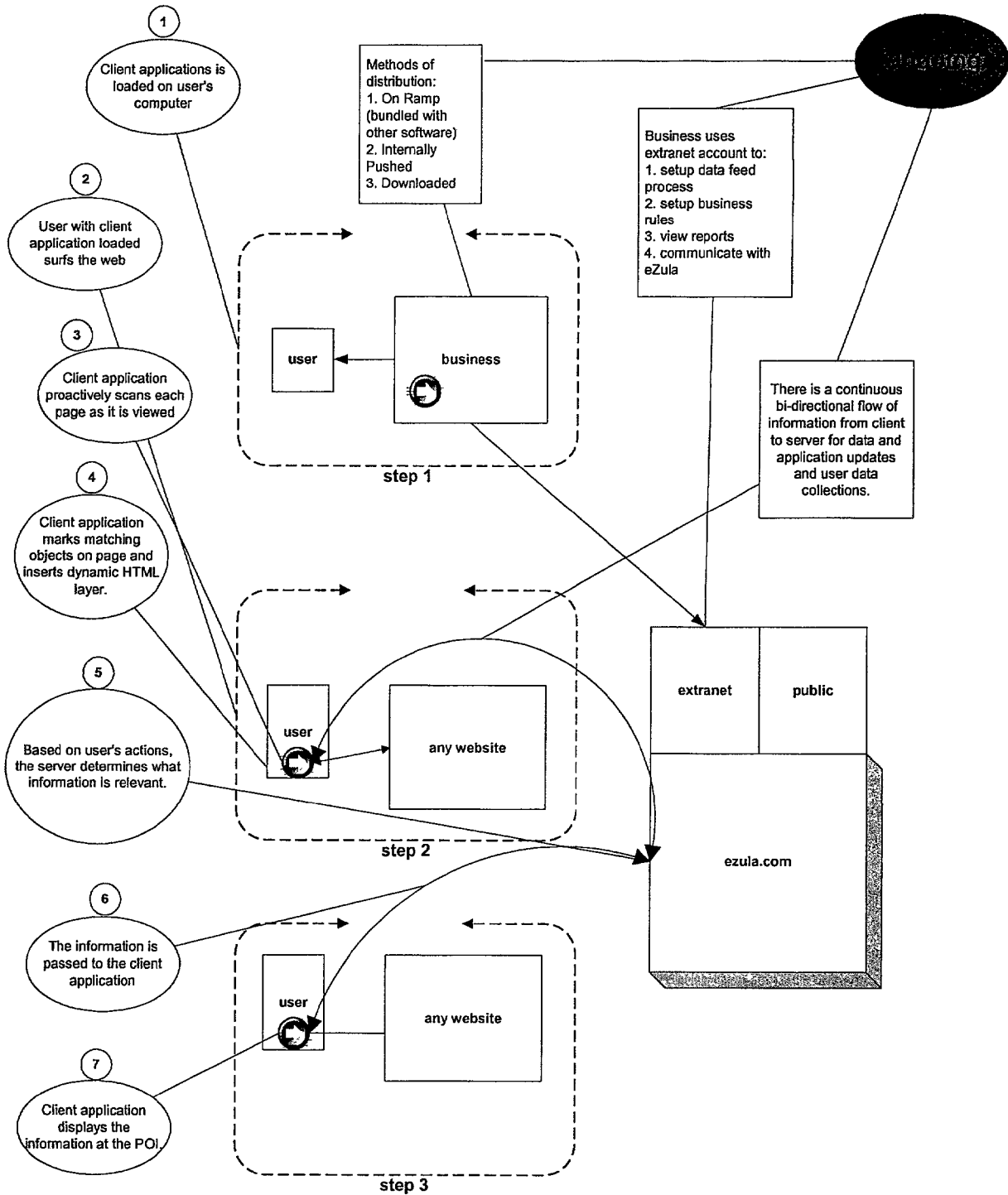


Figure 13

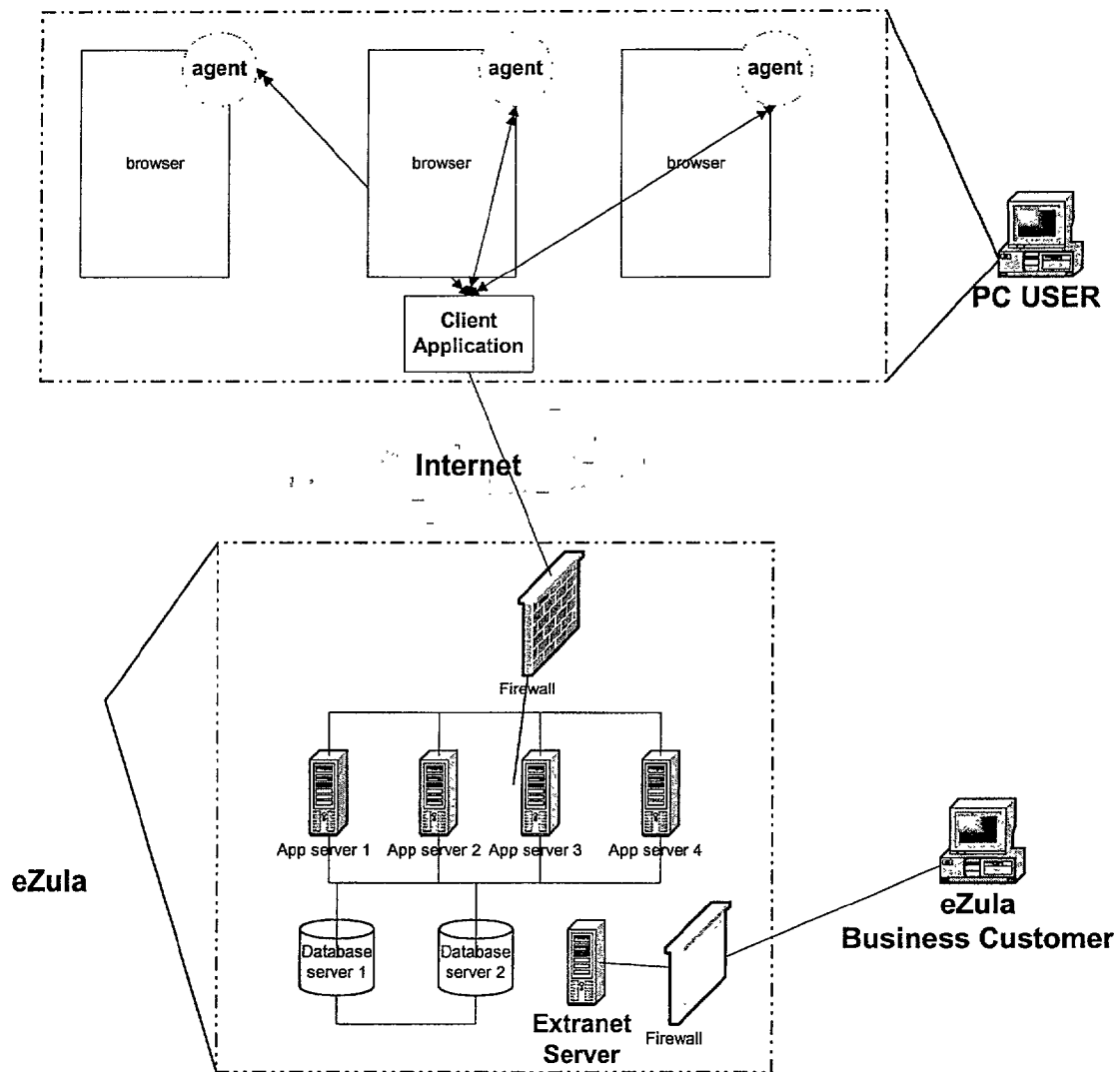


Figure 14

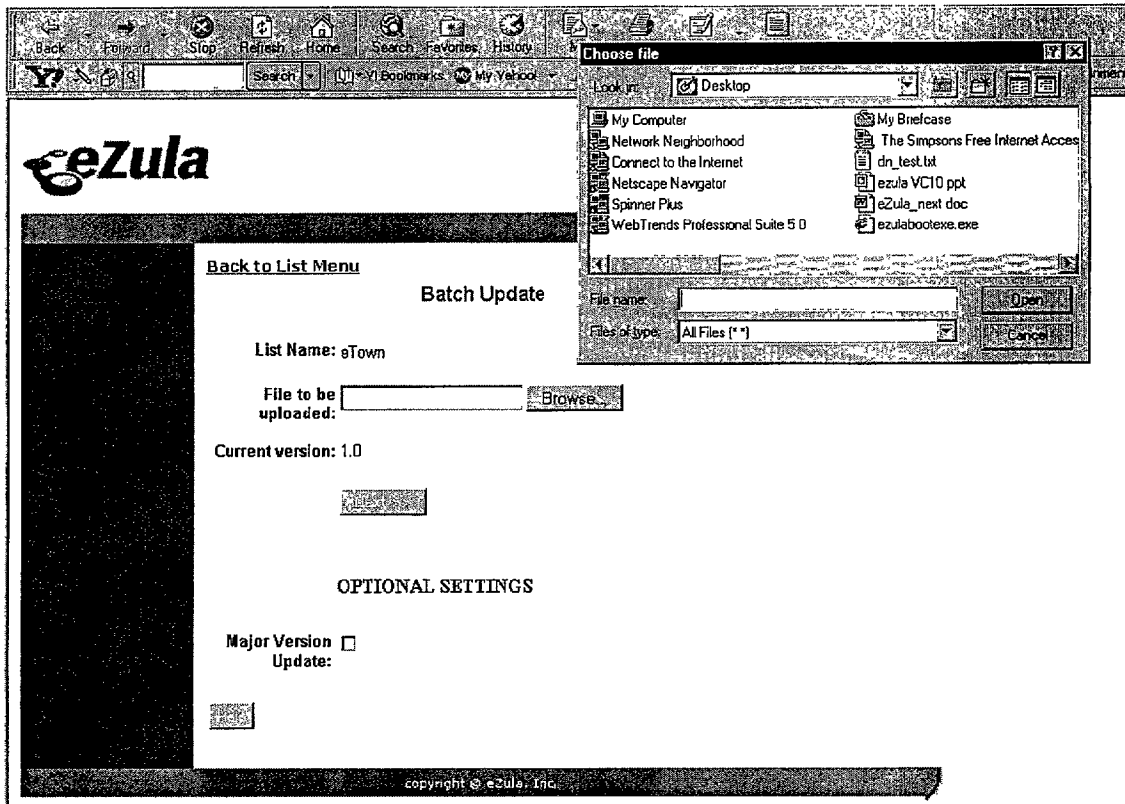
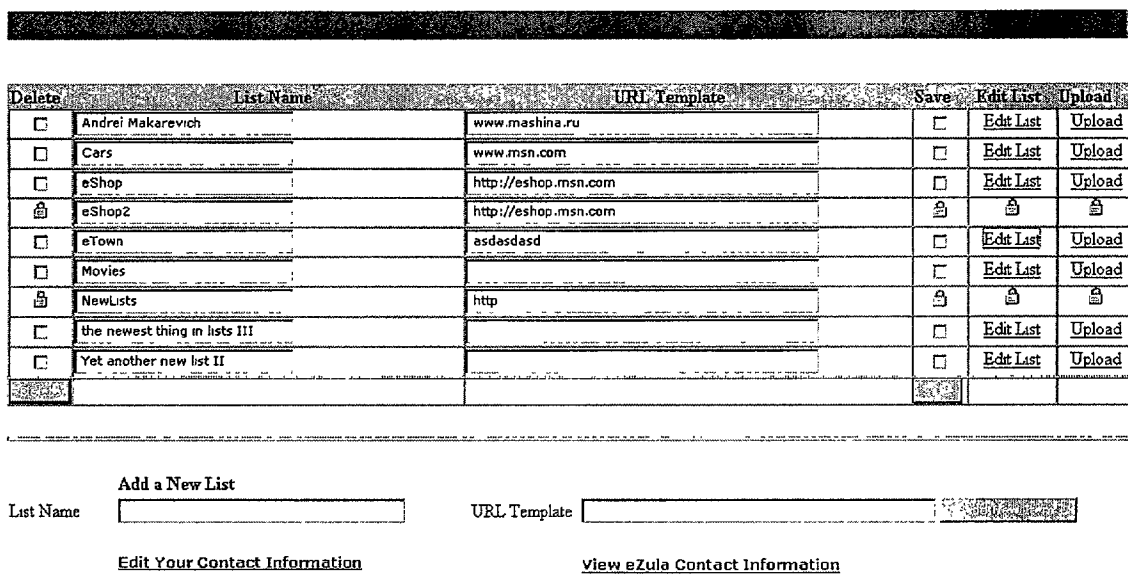


Figure 15



[illegible][illegible]